In a flowchart for infusing the program code of this invention into a nonvolatile semiconductor memory shown in FIG. **4**, the procedure in step **50** is to judge whether the protective circuit **10** is switched to a read/write mode of the virtual data space **30***b*; if positive, it goes to step **51**, or to step **52** otherwise. In the step **51**, a read/write instruction of the hard disk port **20***a* on the motherboard **20** applied to the main data space **30***a* is converted into that of the virtual data space **30***b*. For example, the hard disk port **20***a* on the motherboard **20** effects a read/write instruction with respect to an absolute address S**0**+xx in the main data space **30***a*. The step **51** is to convert the address S0+xx in the main data space **30***a* into a corresponding address S1+xx in the virtual data space **30***b*. The protective circuit **10** is normally in this conversion mode. The step **52** is to read/write the main data space **30***a* directly through the hard disk port **20***a* on the motherboard **20**. For instance, when a read/write instruction is effected from the motherboard **20** through the hard disk port **20***a* to a S**0**+xx address in the main data space **30***a*, the step **52** is to read/write data from or to the address S**0**+xx in die main data space **30***a* directly, namely, the step **52** is usually applied in this setup mode when the first time the operating system and application software are installed. After the first time a user has installed operating system and application software in the main data space **30***a*, he may run an external program code to copy the data in the main data space **30***a* to the virtual data space **30***b*. The protection circuit **10** can then be switched to the conversion mode for normal operation.

Flash memory may be adopted as the nonvolatile semiconductor memory **102** of this invention for updating the inside program code more conveniently.

The external program code may be stored in a floppy disk to be read by a floppy disk drive (not shown) and run by a CPU (not shown) disposed on the motherboard **20**, or integrated in the BIOS (not shown) of the motherboard **20** and run by a predetermined hot key when booting a computer system.

In the above described, at least one preferred embodiment has been described in detail with reference to the drawings annexed, and it is apparent that numerous variations or

modifications may be made without departing from the true spirit and scope thereof, as set forth in the claims below.

What is claimed is:

1. A protective circuit for protecting bard disk data, comprising:

a first hard disk coupling device connected to a hard disk port of a motherboard;

a second hard disk coupling device connected to a hard disk;

a hard disk signal processor coupled to the first hard disk coupling device, the second hard disk coupling device, and a microprocessor;

a random access memory (RAM) connected to the microprocessor; and

a nonvolatile semiconductor memory having program codes for running in the microprocessor to convert a read/write instruction from/to a main data space of the hard disk into a read/write instruction from/to a virtual data space in a conversion mode or executing a direct read/write instruction from/to the main data space in a setup mode;

wherein if data stored in the virtual data space are corrupted, the protective circuit is controlled to copy the data in the main data space to the virtual data space to recover the virtual data space.

2. The protective circuit according to claim **1**, wherein the first hard disk coupling device is an Integrated Drive Electronics (IDE) coupling device.

3. The protective circuit according to claim **1**, wherein the second hard disk coupling device is also an IDE coupling device.

4. The protective circuit according to claim **1**, wherein an external program code is used to partition the hard disk (HD) connected to the second hard disk coupling device into the main data space and the virtual data space.

5. The protective circuit according to claim **1**, wherein the main data space in the hard disk is arranged for storing an operating system.

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